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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,521	02/24/2004	Paul Edmonds	51410/P047C1	8310
27517	7590	10/05/2006	EXAMINER	
FULBRIGHT & JAWORSKI L.L.P. 2200 ROSS AVENUE SUITE 2800 DALLAS, TX 75201-2784			MAHMOUDI, HASSAN	
			ART UNIT	PAPER NUMBER
			2165	

DATE MAILED: 10/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/785,521	EDMONDS, PAUL
	Examiner	Art Unit
	Tony Mahmoudi	2165

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-17 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-4,6-12 and 14-16 is/are rejected.
- 7) Claim(s) 5,13 and 17 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 24 April 2004 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 02/24/2004 AND 05/27/2004.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

Priority

1. The instant application claims benefit of the filing date and priority (continuation) to the U.S. Non-Provisional Patent Application S/N 09/945,358, filed on 31-August-2001. Since the subject matter of the instant application is fully supported by the parent application, the filing date of the Provisional Patent Application (31-August-2001) is considered the effective filing date for the examination of the instant application.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include at least one reference character **not** mentioned in the description. For example:

Reference character **110** in figure 1.

The above is just one example of a reference character not mentioned in the descriptions. The applicant is requested to review and correct all sheets of drawings as appropriate.

3. The drawings are objected to under 37 CFR 1.83(a) because:

They fail to show at least one element as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). For example:

Reference character 100, described in the specification as “Kernel file” does not appear on drawing figure 1. Instead, figure 1 identifies the Kernel file with reference character 110.

The above is just one example of reference characters not mentioned in the descriptions. The applicant is requested to review and correct all sheets of drawings as appropriate.

4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specifications

5. The specification of the instant application is objected to in view of the objection(s) made above to the drawings. The specification must correctly and sufficiently reference every element shown on the drawing figures. Wherever there is a discrepancy between an element depicted in the drawings and references made to the element in the specification (or lack thereof), either the figures of drawings, or the specifications, or both must be corrected to overcome the discrepancy. Appropriate corrections to the specifications are required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the ***second paragraph*** of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claims 1 and 16 (and their dependent claims) as well as claim 12 (dependent from claim 11) recite, “***processing*** by the first client the first unread queue entry”, which renders the claims indefinite. It is not clear by the limitations of the above claims as to what “processing” consists of and/or what it involves (i.e., reading, storing, parsing, etc.) The specification of the instant application merely mentions “processing” in the same manner as

recited in the claims. The specification does not elaborate as to what is included and/or involved in the claimed “processing” function. This rejection can be overcome by the Applicant’s amendment to the referenced independent claims to either cancel/replace the step of “processing”, or define “processing” within the claims, as supported by the original specification.

Claim 11 (and its dependent claims) recite, “*examining* by the second client the entry”, which renders the claims indefinite. It is not clear by the limitations of the above claim(s) as to what “examining” consists of and/or what it involves. The specification of the instant application merely mentions “examining” in the same manner as recited in the claims. The specification does not elaborate as to what is included and/or involved in the claimed “examining” function. Neither the referenced claims nor the specification of the instant application provide any details as to whether or not the recited “examining” feature is meant as a “pass/fail” function, and they do not provide any examination (passing/failing) criteria or degree of measurement for the function of “examining”. Neither do they provide details as to what would happen if the examining step passes or fails. The Applicant can overcome this rejection by amending the referenced independent claim to either cancel/replace the step of “examining”, or define “examining” within the claim, as supported by the original specification.

Claims 5, 13, and 17 are further rejected under 35 U.S.C. 112, second paragraph, because they each recite:

“a count of *the number of empty slots* in the kernel file”;
“a count of *the number of slots* being filled....”;
“a count of *the total number of slots* in the kernel file”;
“an offset of *the first slot* that is ready....”;
“an offset of *the first empty slot*” and
“a queue priority of *the first slot* that is waiting to be processed.”

There is insufficient antecedent basis for these limitations in the claim.

This rejection can be overcome by amending the above claims to remove the term “*the*” from the referenced limitations, and/or replacing the term “*the*” with “*a*” or “*an*”, as appropriate.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 1-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Independent claims 1, 11, and 16 (and their dependent claims), are not statutory because they produce results that are not considered tangible. The result of “processing by the first client the first unread queue entry” produced by claims 1 and 16, and the result of “examining by the second client the entry” produced by claim 11 are not considered tangible result because the produced end-results are not stored anywhere in memory nor are the

results presented/outputted on a tangible medium (e.g. displayed/presented to a user or printed.) The Applicant can overcome this rejection by amending the independent claims to recite tangible results, provided that the originally filed specification supports such results.

Appropriate corrections are required.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-4, 7, 11-12, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cabrera et al (U.S. Publication No. 2003/0056069 A1, hereinafter referred to as Cabrera) in view of Landfield et al (U.S. Patent No. 5,928,333, hereinafter referred to as Landfield.)

As to claim 1, Cabrera teaches a method (see paragraphs 10 and 44) comprising: attempting by a first client to lock a header of a kernel file to prevent simultaneous access by other clients (see paragraph 47, where “header of a kernel file” is read on “the buffer header”; and where “prevent simultaneous access” is read on “coordinate access”; also see paragraph 56); obtaining by the first client a lock of the kernel file header (see paragraphs 12, 41, 47 and 56);

retrieving by the first client a first unread queue entry from one of the slots (see paragraphs 9, 11 and 52; and see paragraph 40, where “unread queue entry” is read on “new data transfer”);

unlocking by the first client the kernel file header (see paragraph 47, where “the LOCK field 504 indicates that the buffer is unlocked and available for read and write access”); and processing by the first client the first unread queue entry (see paragraphs 32, 38 and 47, where “process” is “reading a data buffer”.)

Cabrera does not explicitly teach wherein the kernel file is included in a queue, implemented in a queue data structure, and has one or more slots to accommodate entries in the queue (*although he teaches hash queues and Least-Recently-Used (LRU) queues implemented in a queue data structure [see paragraphs 21 and 34].*)

Nonetheless, Landfield teaches a network implemented electronic mail management system (see column 1, lines 15-17), in which he teaches a queue, implemented in a queue data structure (see column 2, lines 21-32, where “electronic mail queue” is taught; see column 3, lines 35-44, where “queue data structure” is read on “electronic messages are stored within message queues”; and see column 5, lines 20-43, where “message queue” is taught), and has one or more slots to accommodate entries in the queue (see column 6, lines 42-65, where “insertion” is taught, indicating “accommodating entries in the queue; and see column 7, lines 3-10.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Cabrera by the teachings of Landfield, because including queues (queue data structures) having slots to accommodate entries in the

queue will enable the system to process messages with a desired order (based on relevance, importance, or the time the messages are received, etc., as well as for arrangement of similar and/or related entries under the same header for speedy retrieval of the related messages.

Landfield uses the queue data structure such that “single messages within the current message queue or multiple messages within the current message queue can be selected by searching for character strings within the header information associated with the messages”, as taught in column 7, lines 41-46.)

As to claim 2, Cabrera as modified, teaches wherein:

the queue is a time queue (see Cabrera, paragraph 36, where “relative availability status corresponds to the relative times of last usage of the data buffers” in a LRU queue; and see Landfield, column 5, lines 44-56.)

Cabrera as modified, still does not teach wherein:

each queue entry is a message;
each queue entry file is a message file; and
each queue entry has a queue priority, the queue priority being a delivery time of the queue entry message.

Landfield further teaches wherein

each queue entry is a message (see column 5, lines 43-57);
each queue entry file is a message file (see column 5, line 62 through column 6, line 3, where “a message file” is read on “saving messages to disk files”); and

each queue entry has a queue priority, the queue priority being a delivery time of the queue entry message (see column 5, lines 53-57; and see column 5, lines 47-67.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Cabrera as modified, with the further teachings of Landfield, because including a message as a queue entry, storable into a message file, and having a delivery time priority, would enable the system to store, prioritize and make attempts to deliver the entries (email messages in the invention of Landfield), and would enable the system to “manipulate and manage messages within the mail message queue” and re-queue messages for re-delivery, as taught by Landfield in columns 3, lines 35-44; and in column 6, lines 10-12, respectively.

As to claim 3, Cabrera as modified, still does not teach wherein the queue data structure comprises:

a directory for storing queue entry files; and
a notification file.

Landfield further teaches wherein the queue data structure comprises:
a directory for storing queue entry files (see column 5, lines 8-20); and
a notification file (see column 5, lines 21-43, where “notification” is read on “delivering the messages within the mail message queue”.)

Therefore, Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Cabrera as modified, with the further teachings of Landfield, because including a directory for storing queue entry files

would enable the system to organize and categorize messages for users within the predefined structure of a file directory; and including a notification file, would enable the system to notify clients of the delivered messages (delivery confirmation) and/or of delivery failures for various reasons, in order for the administrators to recover undelivered messages.

As to claim 4, Cabrera as modified, teaches wherein the directory for storing queue entry files is a message directory (see Landfield, column 4, line 62 through column 5, line 13.)

As to claim 7, Cabrera as modified, teaches the method further comprising: receiving a new queue entry from a client (see Cabrera, paragraph 34, where “receiving a new queue entry” is read on “another no recall request is received”); storing the new queue entry in the queue in a list of unread queue entries (see Cabrera, paragraphs 34 and 37); and posting a notification in a notification file (see Landfield, column 5, lines 21-43, where “notification” is read on “delivering the messages within the mail message queue”.)

As to claim 11, Cabrera teaches a method (see paragraphs 10 and 44) comprising: locking a header of a kernel file by a first client (see paragraphs 12, 4; see paragraph 47, where “header of a kernel file” is read on “the buffer header”; and see paragraph 56);

inserting into one of the slots an entry which is newer than any other entry (see paragraphs 21, 31-34, 37, and 42, where “inserting new buffer into the queue structure” is taught);

unlocking by the first client the header (see paragraph 47, where “the LOCK field 504 indicates that the buffer is unlocked and available for read and write access”); locking the header by the second client (see paragraphs 12, 41, 47, and see paragraph 56);

and

examining by the second client the entry (see paragraphs 32, 38 and 47, where “examining” is read on “reading a data buffer”).

Cabrera does not explicitly teach wherein the kernel file is included in a time queue and has one or more slots (*although he teaches queues and insertion of buffer headers into queue structures [see paragraph 42]*); and

does not explicitly teach changing an attribute of a notification file, thereby waking a second client.

Landfield teaches a time queue, (see column 2, lines 21-32, where “electronic mail queue” is taught; see column 3, lines 35-44, where “queue data structure” is read on “electronic messages are stored within message queues”; and see column 5, lines 20-43, where “message queue” is taught), and has one or more slots (see column 6, lines 42-65, where “insertion” is taught, indicating “one or more slots”; and see column 7, lines 3-10);

and

changing an attribute of a notification file, thereby waking a second client file (see column 5, lines 21-43, where “notification” is read on “delivering the messages within the

mail message queue", and where the second client is "waken" when the notification (email) is received by the second client.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Cabrera by the teachings of Landfield, because including a time queues having one or more slots, will enable the system to process messages with a desired order (based on relevance, importance, or the time the messages are received, etc., as well as for arrangement of similar and/or related entries under the same header for speedy retrieval of the related messages. Landfield uses the queue data structure such that "single messages within the current message queue or multiple messages within the current message queue can be selected by searching for character strings within the header information associated with the messages", as taught in column 7, lines 41-46.) Also, including changing an attribute of a notification file, thereby waking a second client file, would enable the system to notify clients of the delivered messages (delivery confirmation) and/or of delivery failures for various reasons, in order for the administrators to recover undelivered messages, and would enable the unlocked file header to now be processed by other "awakened" clients as desired.

As to claim 12, Cabrera as modified, teaches wherein examining by the second client the entry comprises:

retrieving by the second client the entry (see Cabrera, paragraphs 9, 11 and 52);
unlocking the kernel file header (see Cabrera, paragraph 47, where "the LOCK field 504 indicates that the buffer is unlocked and available for read and write access"); and

processing the entry (see Cabrera, paragraphs 32, 38 and 47, where “process” is “reading a data buffer”.)

As to claim 14, Cabrera as modified, teaches wherein the time queue is implemented in a time queue data structure (see Landfield, column 2, lines 21-32, where “electronic mail queue” is taught; see column 3, lines 35-44, where “queue data structure” is read on “electronic messages are stored within message queues”), which is employed in a file system maintaining files on a fault-tolerant platform (see Cabrera, paragraph 55), the file system coupled for communication with a network operable to perform file operations requested over the network (see Cabrera, paragraphs 22 and 29), the file system providing strictly enforced, network-wide file locks (see Cabrera, paragraphs 12, 41, 47-48, and 56.)

As to claim 15, Cabrera as modified, teaches wherein the clients are in communication with the network (see Cabrera, paragraphs 22 and 31-32.)

As to claim 16, Cabrera teaches a computer program product (see paragraphs 10 and 22) having a computer readable medium having computer program logic recorded thereon comprising code (see paragraphs 22 and 34, where “logic” is read on “instructions”, and “code” is read on “program modules”.)

For the remaining steps of this claim, the Applicant is directed to the remarks and discussion made in claim 1 above in view of the teachings of Cabrera and Landfield.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cabrera in view of Landfield, as applied to claim 1 above, and further in view of Vanden Heuvel et al (U.S. Patent No. 5,426,424, hereinafter referred to as Vanden Heuvel.)

As to claim 6, Cabrera as modified, still does not explicitly teach wherein the kernel file slots are organized into three virtual groups: a group for empty slots that are empty and ready to receive a message; a group for unread slots that each contain an unread message waiting to be processed by a client; and a group for pending slots that are either being filled by a client or are being processed by a client (*although, the above is the definition of a queue structure and the required functionality of queues in general, the queue being taught by both Cabrera and Landfield throughout their invention.*

Nonetheless, Vanden Heuvel teaches a selective database capable message receiver (see column 1, lines 5-9), in which he clearly teaches file slots are organized into three virtual groups:

a group for empty slots that are empty and ready to receive a message (see “Free” slots in figure 7; and see column 9, lines 63-65);

a group for unread slots that each contain an unread message waiting to be processed by a client (see column 9, lines 65-66, where “unread message waiting to be processed by a client” is read on “oldest unread message is deleted”); and

a group for pending slots that are either being filled by a client or are being processed by a client (see “Occupied” slots in figure 7; and see “a oldest read message is deleted” in column 9, lines 65-66.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Cabrera as modified, by the teachings of Vanden Heuvel, because doing so would define an effective queue structure, ensuring that new entries could always be received by the queue. With such structure, when a new entry is received, it would be placed in available queue slots. If there are no available or free slots to store the new messages, the oldest read entry would be deleted to make storage space for the new entry. In the event that there are no read messages to be deleted, the oldest unread message would be deleted and the messages would get pushed down in the queue to enable storage of the newest entry, as taught by Vanden Heuvel (column 9, lines 63-68.)

13. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cabrera in view of Landfield, as applied to claim 1 above, and further in view of Luke et al (U.S. Patent No. 6,985,956 B2, hereinafter referred to as Luke.)

As to claim 8, Cabrera as modified, does not teach wherein the queue data structure is implemented in a file system employing a CIFS protocol.

Luke teaches a digital network with a plurality of storage elements (see column 1, lines 14-17), in which he teaches wherein the queue data structure is implemented in a file system employing a CIFS protocol (see column 5, lines 47-49; and see column 15, lines 27-34.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Cabrera as modified, by the teaching of Luke, because Common Internet File System protocol (CIFS) is a stateful and a session-

oriented protocol, requiring the client to log on to a server using simple password authentication or a more secure cryptographic challenge, therefore, providing a secure connection between the user/client and the network/Internet.

As to claim 9, Cabrera as modified, does not teach wherein the file system is implemented as a native file system on a fault tolerant, network attached storage (NAS) device.

Luke further teaches wherein the file system is implemented as a native file system on a fault tolerant, network attached storage (NAS) device (see column 6, lines 54-58; and see column 7, lines 31-35.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Cabrera as modified, by the teaching of Luke, because the internal services layer including support for NFS (industry-standard Network File Service, provided over UDP/IP (LAN) or TCP/IP (WAN); and CIFS (compatible with Microsoft Windows File Services, also known as SMB), are among the functions of a Network Attached Storage (NAS) device, as taught by Luke (column 6, lines 54-58.)

As to claim 10, Cabrera as modified, does not teach wherein the NAS device is a RAID device.

Luke further teaches wherein the NAS device is a RAID device (see column 5, lines 47-49; and see column 6, lines 61-67.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Cabrera as modified, by the teaching of Luke, because including wherein the NAS device is a RAID (Redundant Array of Independent Disks), would provide for, among other things, enabling optional data replication (as taught by Luke (column 6, lines 65-67) and provides independent storage disk arrays for effective management of message queues.

Allowable Subject Matter

14. Claims 5, 13, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, **provided that the Applicant overcomes all the rejections made to these claims under the second paragraph of 35 U.S.C. 112 (paragraphs 6 and 7 of this Office Action), and overcomes all the rejections made to their base claims under 35 U.S.C. 101 (paragraphs 8 and 9 of this Office Action.)**

15. The following is a statement of reasons for the indication of allowable subject matter:

The prior art made of record, Cabrera, Landfield, Vanden Heuvel, and Luke do not disclose, teach, or suggest **all** the claimed limitations (in combination with all other features in the above claims).

Although Cabrera and Landfield both teach “file headers in a queue structure”, Landfield further teaches implementing “queue priorities”, and Luke discloses assigning “class priority and policy to packets”, none of the cited prior art made of record teaches for the kernel file header to include counts or keep track of “totals” representing “a count of the number of empty slots in the kernel file”; “a count of the number of slots being filled or processed in the kernel file”; “a count of the total number of slots in the kernel file”; “an offset of the first slot that is ready to be processed by a client acting as a receiver”; and “an offset of the first empty slot”, as recited in dependent claims 5, 13, and 17.

Conclusion

16. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Tony Mahmoudi whose telephone number is (571) 272-4078. The examiner can normally be reached on Mondays-Fridays from 08:00 am to 04:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Jeffrey Gaffin, can be reached at (571) 272-4146.



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